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APR 28 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 10/020,561
Filing Date December 7, 2001
Inventor Joachim Schroeder et al.
Assignee Carl-Zeiss-Stiftung trading as Carl Zeiss
Group Art Unit 2851
Examiner Rodney Evan Fuller
Attorney's Docket No. LO25-009
Title: System For Flushing at Least One Internal Space of an Objective

**Attn: Examiner Rodney Evan Fuller
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450**

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1. Interview Summary
2. Transmittal (PTO/SB/21)
3. Proposed Claims for discussion purposes

Dated: 4/28/2004By: 

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Application Number	10/020,561
Filing Date	December 7, 2001
First Named Inventor	Joachim Schroeder et al.
Art Unit	2651
Examiner Name	Rodney Fuller
Attorney Docket Number	LO25-009

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Interview Summary
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Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	D. Brent Kenady, Reg. No. 40,045 Wells St. John, P.S.
Signature	
Date	4-28-04

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EXAMINER INTERVIEW SUMMARY OF APRIL 28, 2004**RECEIVED
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To: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APR 28 2004

From: D. Brent Kenady
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OFFICIAL

Sir:

Applicants' representative held an interview with Examiner Fuller on April 28, 2004.

Applicants' representative would like to thank Examiner Fuller for his time and attention to this matter.

Applicants' representative presented a set of proposed amended independent claims to Examiner Fuller for discussion in the context of the pending rejections based on the reference to Komoriya, U.S. Patent No. 5,025,284 (independent claims 1, 20-22, 25, 27) (provided herewith). The Examiner tentatively agreed that the proposed amended claims were distinguishable over Komoriya. However, the Examiner reserved the right to

reconsider the proposed amended claims in the context of the art of record, and with the understanding that another prior art search may be necessary.

Applicants' representative also discussed independent claim 28 which was presented as a new claim in the previous response filed on November 10, 2003. Applicants' representative stated that this claim, as presented, was distinguishable over Komoriya. The Examiner stated that he would have to reconsider this claim in light of the art of record.

Applicants' representative also presented proposed new claim 32 for discussion in the context of Komoriya. The Examiner stated that he would have to consider this claim in light of the art of record.

Additionally, the Examiner stated that the proposed amendment language to claim 1 was not supported by the originally-filed application. Respectfully, Applicants' representative directed the Examiner to paragraph 0027 of the originally-filed application which states, "[f]or this purpose, nozzles arranged in an appropriate distribution on the circumference can spray different gasses into the air space of the objective." The Examiner agreed that this statement supported the proposed amendment language of claim 1. However, the Examiner then stated that the drawings do not disclose structure of the proposed amendment language of claim 1. Applicants' representative pointed out that the full sectional view (as opposed to a partial sectional view) of Figure 1 could not be modified to show additional openings that included directional arrows to indicate gas flowing into the openings and into the chamber. The Examiner agreed.


The Examiner also stated that enablement issues may exist regarding the proposed amendment language of claims 21-22, and specifically referred to the proposed

amendment language of claim 22 which recites: wherein the chamber comprises a gradient of gasses. The Examiner stated he was unsure how gradients of gas could be produced in the chamber of an objective. Applicants' representative pointed the Examiner to paragraphs 0027 - 0029 of the originally-filed application, and particularly to the last sentence of paragraph 0028 to paragraph 0029 which explains the design necessary to provide a gradient of gasses within the chamber. That is, paragraph 0028 states that "it must be possible to represent specific, stable mixing gradients of the gasses in the closed gas space." The discussion continues in paragraph 0029: "This means in design terms that the inlet openings 5a and outlet openings 5b illustrated in figure 1 are to be arranged distributed correspondingly over their circumference of the objective 1, and that locally differing gasses are to be introduced via the inlet openings" (emphasis added). Applicants' representative submits this is all that one skilled in the art needs to understand how the proposed amendment language of claims 21 and 22 are enabled.

Once again, Applicants' representative would like to thank Examiner Fuller for all his time and efforts in considering the proposed amendments and new claim, and the helpful suggestions provided during the interview.

Respectfully submitted,

Dated: 4-28-04

By: 
D. Brent Kenady
Reg. No. 40,045

LO25-009

Proposed CLAIMS ONLY FOR
discussion with Examiner Fuller

1. (Proposed amendment) A system for flushing at least one closed internal space of an objective, the at least one closed internal space comprising a plurality of openings for delivering a gas into the at the least one closed internal space, flushing being performed by mixing at least two inert gasses in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air; and wherein the at least two inert gases are devoid of oxygen.
(support at paragraphs 0027-0029 of spec.)

2. Proposed for cancelling

20. (Proposed amendment) A method for flushing an objective, comprising:
providing an objective having at least two lenses forming a chamber within the objective; and
flushing the chamber with only inert gases in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air, wherein the chamber comprises different regions and wherein each region comprises a different gas.
(support at paragraphs 0027-0029 of spec.)

21. (Proposed amendment)) A method for flushing an objective, comprising:
providing an objective having at least two lenses forming a chamber within the objective; and
flushing the chamber with gases devoid of air in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air, wherein the chamber comprises different regions and wherein each region comprises a different refractive index.
(support at paragraphs 0027-0029 of spec.)

22. (Proposed amendment)) A method for flushing an objective, comprising:
providing an objective having at least two lenses forming a chamber within the objective; and
flushing the chamber with gases devoid of oxygen in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air, wherein the chamber comprises a gradient of gases.
(support at paragraphs 0027-0029 of spec.)

25. (Proposed amendment)) A method for adjusting optical characteristics of an objective, comprising:

providing an objective having at least two lenses forming a chamber within the objective; and

providing a plurality of openings in the objective to the chamber; and

adjusting a refractive index of the objective in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air by providing only inert gases within the chamber, wherein one inert gas is provided in one opening and a different inert gas is provided in a different opening.
(support at paragraphs 0027-0029 of spec.)

27. (Proposed amendment)) A method for adjusting optical characteristics of an objective, comprising:

providing an objective having at least two lenses forming a chamber within the objective, the objective having a set of optical characteristics comprising at least a first refractive index; and

changing the first refractive index to a second refractive index;

adjusting ~~a~~ the refractive index of the objective to the first refractive index in such a way that the refractive index resulting therefrom corresponds at least approximately to the refractive index of air by providing a gaseous mixture within the chamber, the gaseous mixture comprising at least about 95% by volume of nitrogen.
(support at paragraphs 0027-0029 of spec.)

28. (Previously presented) A semiconductor lithography method comprising:
providing an objective having at least two lenses forming a chamber within the objective;

cleaning the objective by flushing a first gas through the chamber; and

after the cleaning, providing a second gas within the chamber different from the first gas, wherein the refractive index of the second gas corresponds at least approximately to the refractive index of air.

(PLEASE Note: Examiner, I do not believe this claim 28 was rejected in your previous o.a., listed, but not rejected—let's discuss).

32. (New) A method of forming and using an objective, comprising:
forming an objective by mounting at least two lenses in the objective to form a chamber within the objective;
during the forming, providing air in the chamber; and
during use of the objective, providing at least one inert gas in the chamber.